REMARKS/ARGUMENTS

Applicant has carefully reviewed and considered the Final Office Action mailed on November 5, 2009, and the references cited therewith.

Claims 2, 4, 6, 14-20, 22, 23, 25, and 27-30 are amended, claims 1, 21, and 26 are canceled, and claims 31-39 are added; as a result, claims 2-9, 13-16, 25, and 27-39 are now pending in this application.

Applicant respectfully submits that claims 31-39 do not introduce any new subject matter and are intended to cover additional claimable subject matter fully supported by the originally filed specification. Support for the new claims and claim amendments can be found throughout the specification, and in particular, at least in the Abstract and paragraphs 0003, 0032, 0062-0063, 0067, and 0077, among other locations in the specification and drawings.

Examiner Interview

Applicant thanks the Examiners for the courtesy of a telephone interview conducted on January 6, 2010. Proposed amendments were discussed with respect to the outstanding rejections under § 101, § 112, and § 103. The Examiners suggested helpful modifications to the proposed amendment and response to better position the claims for prosecution. However, no specific agreements were made with respect to allowability.

§ 101 Rejection of the Claims

Claims 1-28 were rejected under 35 USC § 101 as being directed to non-statutory subject matter. Applicant respectfully traverses the rejection as follows.

Applicant has canceled independent claims 1 and 26. New independent claim 31 recites, in the body of the claim, "where the method is performed by a computer." Applicant respectfully submits that such limitation ties the method claim to a particular machine.

As such, independent claim 31 recites statutory subject matter. Therefore Applicant respectfully requests reconsideration and withdrawal of the § 101 rejection as it might otherwise apply to new claim 31.

§ 112 Rejection of the Claims

Claims 26-30 were rejected under 35 USC § 112, first paragraph, as failing to comply with the written description requirement. Applicant respectfully traverses the rejection as follows.

Applicant has canceled claim 26. Claims 28 and 30 have been amended and no longer recite "a predefined risk parameter." As such, Applicant respectfully submits that claims 27-30 contain subject matter that was described in the specification in such a way as to reasonably convey to one skilled in the art at the inventors, at time the application was filed, had possession of the claimed invention. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the § 112, first paragraph rejection of claims 26-30.

Claims 14 and 26-30 were rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicant respectfully traverses the rejection as follows.

With respect to claim 14, Applicant respectfully submits that, first, the indicated threshold can be any threshold. Applicant is not claiming a particular threshold. And, second, the threshold measurement is between the actual effect and the intended effect of the plurality of appliances. As such, claim 14 is definite because it particularly points out and distinctly claims the subject matter recited therein. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the § 112 rejection of dependent claim 14.

With respect to claims 26-30, Applicant has canceled independent claim 26 and amended claims 27-30 to depend from new independent claim 31. Accordingly,

Applicant respectfully submits that the § 112 rejection of those claims is moot. As such, Applicant respectfully requests reconsideration and withdrawal of the § 112 rejection of claims 26-30.

§ 103 Rejection of the Claims

Claims 1, 6, 17-20, 22-24, and 26-30 were rejected under 35 USC § 103(a) as being unpatentable over Sachdeva (U.S. Patent No. 6,540,512) in view of Jordan, et al. (U.S. Pub. No. 2003/0163291). Applicant respectfully traverses the rejection as follows.

Applicant has canceled claim 1 and claim 26. Claims 6, 17-20, 22-24, and 27-28 have been amended to depend either directly or indirectly from new independent claim 31. To the extent that the rejection might be applied to new claim 31, Applicant respectfully traverses as follows.

Applicant respectfully submits that the Sachdeva and Jordan references, independently or in combination, do not teach each and every element of Applicant's new independent claim 31.

Sachdeva appears to teach:

> A method and apparatus for treating an orthodontic patient include processing that begins by generating digital information regarding the orthodontic patient by a site orthodontic system. The site orthodontic system then transmits the digital information to an orthodontic server, which creates an electronic patient record therefrom. The orthodontic server then generates an initial treatment from the electronic patient record, wherein the initial treatment plan includes precise steps to obtain a desired orthodontic structure. The orthodontic server then transmits a digital version of the initial treatment plan to the site orthodontic system. Upon confirmation from the site orthodontic system, the orthodontic server designs an orthodontic apparatus for one of the precise steps based on the treatment plan. The orthodontic apparatus is then fabricated and provided to the site orthodontic system. At predetermined points in time after installation of the orthodontic apparatus in accordance with the treatment plan, the patient's mouth is electronically scanned to obtain updated digital information. The site orthodontic system provides the updated digital information to the orthodontic server, which uses the updated digital

information to update the electronic patient record. From the updated electronic patient record, the orthodontic server determines whether the actual movement of the patient's teeth is as predicted. If so, the next step of the initial treatment plan is executed. If, however, the actual movement is not as predicted, the orthodontic server adjusts the treatment plan to obtain the desired results. After the treatment plan has been adjusted, the next step of the revised treatment plan is executed. This monitoring of a patient's progress and revising the treatment plan, when necessary, continues throughout the treatment.

(Abstract).

Jordan appears to teach:

Selection of orthodontic brackets from predefined and existing orthodontic brackets is provided by a user viewing a patient's teeth and using, for example, a user interface, to define a three-dimensional tooth/arch model from three-dimensional model data. Likewise, a prescription is selected. With such information, the teeth of the defined tooth/arch model can be positioned in prescribed positions. Once modifications to the prescription or for that matter the patient's tooth/arch model, if any, are made, predefined and existing orthodontic brackets can be selected, e.g., such selection can be based on selection criteria used to search a database including parameters defining such predefined and existing orthodontic brackets.

(Abstract).

From Applicant's review of Sachdeva and Jordan, the references, alone or in combination do not teach or suggest, among other things, a computer implemented method that includes:

storing in a database data related to each a plurality of dental patient treatment histories, each including:

an initial data set representing teeth of each dental patient prior to treatment;

an intended dental treatment outcome data set for each dental patient; and

an actual dental treatment outcome data set for each dental patient;

clustering the data into clusters based on at least one of a number of parameters including initial dental condition diagnoses, dental treatment parameters, intended dental treatment outcomes, actual dental treatment outcomes, and patient demographics;

modeling discrepancies between the intended dental treatment outcome data sets and the actual dental treatment outcome data sets within each cluster;

correlating the modeled discrepancies to one or more clinicians who performed dental treatments within each cluster; and

detecting one or more patterns of different treatment outcomes achieved by different clinicians based on the correlated modeled discrepancies;

where the method is performed by a computer.

as provided in independent claim 31.

As such, the Sachdeva and Jordan references, alone or in combination, do not teach or suggest each and every element in Applicant's independent claim 31. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the §103(a) rejection with respect to claim 31, as well as with respect to those claims that depend from independent claim 31.

Applicant respectfully submits that the Sachdeva and Jordan references, independently or in combination, do not teach each and every element of Applicant's new independent claim 29, as amended.

From Applicant's review of Sachdeva and Jordan, the references, alone or in combination do not teach or suggest, among other things, an apparatus that includes: one or more processors;

a database including stored information related to a plurality of patient treatment histories, each including:

an initial data set representing teeth of each dental patient prior to treatment;

an intended dental treatment outcome data set for each dental patient; and

an actual dental treatment outcome data set for each dental patient; and

a memory for storing instructions which, when executed by the one or more processors, causes the one or more processors to:

access information from the database;

perform a clustering operation on the accessed information from the database;

model discrepancies between the intended dental treatment outcome data sets and the actual dental treatment outcome data sets;

correlate the modeled discrepancies to one or more clinicians who performed dental treatments within each cluster; and

detect one or more patterns in the accessed information, the one or more patterns associated with one or more different treatment outcomes achieved by different clinicians based on the correlated modeled discrepancies.

as recited in Applicant's independent claim 29, as amended.

As such, the Sachdeva and Jordan references, alone or in combination, do not teach or suggest each and every element in Applicant's independent claim 29, as amended. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the §103(a) rejection with respect to claim 29, as well as with respect to claim 30 that depends from independent claim 29.

Claims 2-5, 13, and 15-16 were rejected under 35 USC § 103(a) as being unpatentable over Sachdeva (U.S. Patent No. 6,540,512) in view of Jordan, et al. (U.S. Pub. No. 2003/0163291) in further view of Chishti, et al. (U.S. Patent No. 5,975,893). Applicant respectfully traverses the rejection as follows.

Claims 2-5, 13, and 15-16 depend either directly or indirectly from new independent claim 31. For the reasons stated above, Applicant submits that the Sachdeva and Jordan references do not teach or suggest each and every element in Applicant's independent claim 31. From Applicant's review of the Chishti '893 reference, Chishti '893 does not cure the deficiencies of the Sachdeva and Jordan references.

For example, Sachdeva, Jordan, and Chishti '893, alone or in any combination, do not teach or suggest a computer implemented method that includes:

storing in a database data related to each a plurality of dental patient treatment histories, each including:

an initial data set representing teeth of each dental patient prior to treatment;

an intended dental treatment outcome data set for each dental patient; and

an actual dental treatment outcome data set for each dental patient;

clustering the data into clusters based on at least one of a number of parameters including initial dental condition diagnoses, dental treatment parameters, intended dental treatment outcomes, actual dental treatment outcomes, and patient demographics;

modeling discrepancies between the intended dental treatment outcome data sets and the actual dental treatment outcome data sets within each cluster;

correlating the modeled discrepancies to one or more clinicians who performed dental treatments within each cluster; and

detecting one or more patterns of different treatment outcomes achieved by different clinicians based on the correlated modeled discrepancies;

where the method is performed by a computer.

as provided in independent claim 31.

As such, Applicant respectfully requests reconsideration and withdrawal of the §103(a) rejection with respect to claims 2-5, 13, and 15-16, which depend from independent claim 31.

Claims 7-9, 14, and 25 were rejected under 35 USC § 103(a) as being unpatentable over Sachdeva (U.S. Patent No. 6,540,512) in view of Jordan, et al. (U.S. Pub. No. 2003/0163291) in further view of Chishti, et al. (U.S. Patent No. 6,471,511). Applicant respectfully traverses the rejection as follows.

Claims 7-9, 14, and 25 depend either directly or indirectly from new independent claim 31. For the reasons stated above, Applicant submits that the Sachdeva and Jordan references do not teach or suggest each and every element in Applicant's independent claim 31. From Applicant's review of the Chishti '511 reference, Chishti '511 does not cure the deficiencies of the Sachdeva and Jordan references.

For example, Sachdeva, Jordan, and Chishti '511, alone or in any combination, do not teach or suggest a computer implemented method that includes:

storing in a database data related to each a plurality of dental patient treatment histories, each including:

an initial data set representing teeth of each dental patient prior to treatment;

an intended dental treatment outcome data set for each dental patient; and

an actual dental treatment outcome data set for each dental patient;

clustering the data into clusters based on at least one of a number of parameters including initial dental condition diagnoses, dental treatment parameters, intended dental treatment outcomes, actual dental treatment outcomes, and patient demographics;

modeling discrepancies between the intended dental treatment outcome data sets and the actual dental treatment outcome data sets within each cluster;

correlating the modeled discrepancies to one or more clinicians who performed dental treatments within each cluster; and

detecting one or more patterns of different treatment outcomes achieved by different clinicians based on the correlated modeled discrepancies;

where the method is performed by a computer.

as provided in independent claim 31.

As such, Applicant respectfully requests reconsideration and withdrawal of the §103(a) rejection with respect to claims 7-9, 14, and 25, which depend from independent claim 31.

Claims 17-24 were previously rejected under 35 U.S.C. § 103(a) as being unpatentable over Sachdeva (US 6,540,512 B1) in view of Jordan, et al. (US 2002/0163291 A1) in further view of Official Notice. The instant Office Action asserts that the Applicant did not address the Official Notice in the previous response and that therefore the Official Notice and statements are deemed admitted prior art. Applicant respectfully traverses this assertion as follows.

In the previous response, Applicant amended independent claim 1 and stated:

> As understood, none of the cited references disclose or otherwise render obvious the claimed combination set forth in pending independent claim 1. Accordingly, Applicants respectfully submit that claim 1, and claims 2-9, 13-20 and 22-25 dependent therefrom, are allowable.

(Page 10). Applicant respectfully submits that the above quoted language sufficiently traversed the Official Notice.

Alternatively, the Applicant herein explicitly traverses the Official Notice. The subject matter of claims 17-20 and 22-24 is not old and well known in the art. If the Official Notice is maintained as a basis for rejection after a review of Applicant's response, Applicant respectfully requests citation of one or more documents supporting the Examiner's Official Notice, in accordance with MPEP § 2144.03.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicants' below listed attorney at (612) 236-0121 to facilitate prosecution of this matter.

CERTIFICATE UNDER 37 C.F.R. §1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: **MS RCE** Commissioner for Patents, P.O. BOX 1450, Alexandria, VA 22313-1450, on this 27 day of January, 2010.

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